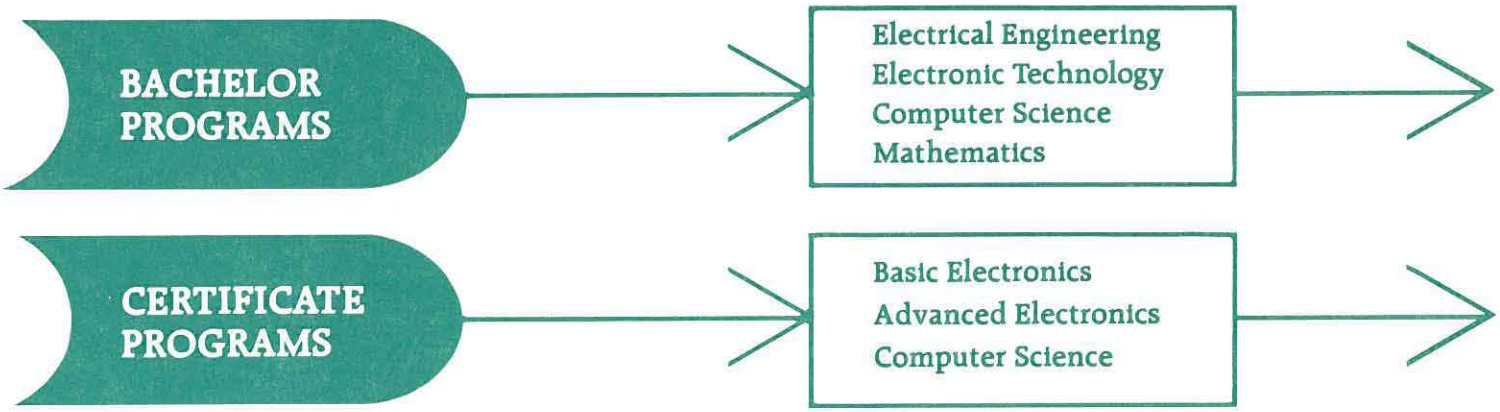
1981

# Bachelor of Science & Engineering Program Overview

Nova Southeastern University

8103

# NOVA COLLEGE
# The Corporate Division




Develop Your Technical Potential

Part Time and Full Time Degree Programs

Designed for the Working Adult in Cooperation with Industry

"Second Bachelor" Programs for those who now need a Technical Degree

### FORMAT

Classes will meet for 4.5 hours for 9 sessions either in the evening from 6-10:30 PM or on Saturday from 8:30 AM-1:00 PM at the main Nova campus, or at industrial sites.

### ADMISSION REQUIREMENTS

Students must be high school graduates (or equivalent), and take the Corporate Division Placement Test, which will evaluate ability to read, write, and perform mathematical calculations (hand calculator permitted) on the level needed for college work. College Board or Miller Analogy scores may be substituted by students in lieu of Placement Test. A student may take up to 2 courses as a Special Student or while in the process of applying before taking the Placement Test.

### CAN I TAKE A COURSE OR TWO WITHOUT ENROLLING IN A DEGREE PROGRAM?

YES. In this case, you check "Special Student" on the application form. You do not have to take the Placement Test to take one or two courses as a "special student."

### HOW DO I APPLY FOR ADMISSION?

Complete the application forms and return with a non-refundable $15.00 application fee by mail or in person. All checks should be made payable to NOVA UNIVERSITY. All materials should be sent to Nova College, Registrar's Office, Nova University, 3301 College Avenue, Fort Lauderdale, FL 33314.

### HOW DO I REGISTER?

Discuss your needs with the counselor, by phone or in person, complete the registration form. It should be returned with a check in the appropriate amount made out to NOVA UNIVERSITY, and sent to the same address as indicated in the admission question above.

### WHAT IS THE COST OF ATTENDING?

| | |
|---|---|
| Application fee (non-refundable): | $15.00 |
| Registration fee: | $15.00 |
| Tuition (per credit) | $75.00 |
| Late registration fee (after Feb. 27) | $10.00 |

### WHAT CREDIT CARDS CAN I USE?

Master Charge
VISA
Hollywood Buy-O-Matic

### FOR INFORMATION CALL:

**BROWARD COUNTY: 475-7650**
**DADE COUNTY: 940-6644, Ext. 7649/50 (toll free)**
**PALM BEACH COUNTY: 732-6600, Ext. 7649/50 (toll free)**

**Nova University / College Avenue / Fort Lauderdale, Florida 33314**

Nova University is fully accredited by the Southern Association of Colleges & Schools

Please mail to:

Dr. Anna Mae Walsh Burke, Director
Nova College: The Corporate Division
Nova University
3301 College Avenue
Ft. Lauderdale, FL 33314

_____ Electrical Engineering
_____ Electronic Technology
_____ Computer Science
_____ Computer Systems
_____ Other

Please send information on Corporate Division Programs:

NAME_____ HOME PHONE_____

ADDRESS_____ EMPLOYER_____

_____ BUSINESS PHONE_____

(City) (State) (Zip)

(THIS IS NOT A REGISTRATION FORM)

## COURSES BEGINNING MARCH 9, 1981

| COURSE NO. | SECTION | DESCRIPTION | DAY | TIME | LOCATION |
|---|---|---|---|---|---|
| CS 170 | A | Computer Programming I | T | 6:00-10:30pm | P 208 |
| CS 170 | B | Computer Programming I | Th | 8:30-1:00pm | P 208 |
| CS 220 | A | Business Oriented Language (COBOL) | Th | 6:00-10:30pm | TBA |
| CS 230 | A | Structured programming | W | 6:00-10:30pm | P 208 |
| CS 240 | A | Digital Design | S | 8:30-1:00pm | TBA |
| CS 240 | B | Digital Design | S | 8:30-1:00pm | Palm Bch. |
| CS 310 | A | Programming Techniques | T | 6:00-10:30pm | P 213 |
| CS 350 | A | Computer Circuit Design | Th | 6:00-10:30pm | P 208 |
| EE 440 | A | Energy Systems | W | 6:00-10:30pm | P 209 |
| ETR 110 | A | Networks I | Th | 6:00-10:30pm | P 209 |
| ETR 110 | B | Networks I | T | 8:30-1:00pm | P 208 |
| ETR 120 | A | Electronics I | S | 8:30-1:00pm | P 208 |
| ETR 130 | A | Electronics Lab I | M | 6:00-10:30pm | P 3rd fl. |
| ETR 230 | A | Electronics Lab II | M | 6:00-10:30pm | P 3rd fl. |
| ETR 255 | A | Electricity Lab | M | 6:00-10:30pm | P 3rd fl. |
| ETR 430 | A | Networks III | T | 6:00-10:30pm | P 130 |
| MAT 150 | A | College Math | Th | 6:00-10:30pm | P 106 |
| MAT 220 | A | Calculus II | Th | 6:00-10:30pm | P 214 |
| MAT 310 | A | Differential Equations | Th | 6:00-10:30pm | P 107 |
| PHY 140 | A | Physics I | W | 6:00-10:30pm | P 107 |

## COURSE DESCRIPTIONS

**CS-170 Computer Programming I**
An introduction to good programming techniques including flow charting, code design, debugging techniques and documentation, problem-solving methods and algorithm development to be used in the design of computer programs. The language, BASIC, will be taught as part of this course. An introduction to the use of microcomputers and computer terminals.

**CS-220 Business Oriented Language (COBOL)**
A detailed study of COBOL languages with application to business problems, identifications, environment, data and procedure divisions, syntax structure. File organization is discussed in connection with the data processing system.
**Prerequisite: Computer Programming I or Equivalent.**

**CS-230 Structured Programming**
Basic principles of structured programming and language foundation. PASCAL will be taught as an example of a structured programming language.
**Prerequisite: Computer Programming I or Equivalent.**

**CS-240 Digital Design**
Continuation of Digital Systems course with particular emphasis on the organization and structuring of major hardware components and peripheral devices. The mechanics of information transfer and control within a digital system and the fundamentals of logic design will be discussed. **Prerequisite: Digital Systems or Equivalent**

**CS-310 Programming Techniques**
Advanced programming techniques including algorithm analysis, database management, memory management. **Prerequisite: Digital Systems, Computer Programming II, some advanced languages.**

**CS-350 Computer Circuit Design**
Design of combinational and sequential digital circuits. **Prerequisite: Digital Design.**

**EE-440 Energy Systems**
Conversion of energy between electrical and other forms — electromechanical, electrochemical, photoelectric, thermoelectric and other methods of conversion are studied, transmission of electric power. **Prerequisite: Physics II and Electronics I**

**ETR 110 Networks I**
Definitions of change, current voltage, energy, Ohm's Law, Kirchoff's Law, networks, resistance, voltage, Current Power, Nodal analysis, mesh analysis, principle of superposition, power transfer, Thevin and power theorems. Two port networks, admittance parameter, impedence parameters, hybrid parameters. **Prerequisite: College Mathematics or Equivalent.**

**ETR-120 Electronics I**
Physical theory and analysis of semi-conductor properties, circuits containing non-linear elements, semiconductor diodes, zener diodes, conduction in semiconductors, transistor characteristics, large system signal analysis, small models, single-stage amplifiers. **Prerequisite: Networks I or Circuit Theory I and Circuit Theory II**

**ETR-130 Electronics Lab I** - (1 cr.)
Lab work to complement electronics theory course. **Prerequisite: Networks I, or Circuit Theory I and Circuit Theory II, and Electronics I**

**ETR-230 Electronics Lab II** - (1 cr.)
Lab work to complement electronics theory course. **Prerequisite: Electronics Lab I, Electronics II**

**ETR-255 Electricity Laboratory**
Basic lab to complement Networks theory courses.

**ETR-430 Networks III**
Continuation of Networks II to include Fourier series and Z-transforms, magnetic coupling, introduction to filter theory, and advanced topics in Networks Theory. **Prerequisite: Networks II, Calculus II**

# SUMMARY OF PROGRAM REQUIREMENTS

All courses are 3 semester hours of credit unless otherwise indicated.

| EE | ET | CS | MATH | SYS | BEC | AEC | | |
|---|---|---|---|---|---|---|---|---|
| x | x | x | x | x | x | | | Communications (3 cr.) |
| x | x | x | x | x | | | | Communications (3 cr.) |
| x | x | x | x | x | | | | Social Science (3 cr.) |
| x | x | x | x | x | | | | Social Science (3 cr.) |
| x | x | x | x | x | | | | Humanities (3 cr.) |
| x | x | x | x | x | | | | Humanities (3 cr.) |
| x | x | x | x | x | | | | Behavioral Science (3 cr.) |
| x | x | x | x | x | | | | Behavioral Science (3 cr.) |
| | x | | | | | | MAT-140 | Technical Mathematics |
| | x | x | | x | x | | MAT-150 | College Mathematics |
| x | x | x | x | x | | | MAT-210 | Calculus I |
| x | | x | x | | | | MAT-220 | Calculus II |
| x | | | x | | | | MAT-230 | Calculus III |
| x | | | x | | | | MAT-310 | Differential Equations |
| x | | | x | | | | MAT-320 | Advanced Calculus |
| x | | x | x | | | | MAT-420 | Linear Algebra |
| | | | x | | | | MAT-430 | Fns. of a Complex Variable |
| | | x | x | | | | MAT-440 | Numerical Analysis |
| x | | | x | | | | MAT-450 | Probability & Statistics |
| x | x | x | x | x | | x | PHY-140 | Physics I |
| x | x | x | x | x | | x | PHY-150 | Physics II |
| x | x | x | x | x | | | PHY-160 | Physics III |
| x | x | x | x | | | | PHY-210 | Modern Physics |
| x | x | x | x | | | | PHY-212 | Science of Matter or Chemistry |
| x | x | x | x | x | x | | CS-160 | Digital Systems |
| x | x | x | x | x | x | | CS-170 | Computer Programming I |
| x | x | x | x | x | | x | CS-210 | Fortran |
| | | x | x | x | | | CS-220 | Business Oriented Language (COBOL) |
| | | x | x | | | | CS-230 | Structured Programming |
| x | x | x | x | | | x | CS-240 | Digital Design |
| x | | x | x | x | | | CS-255 | Computer Programming II |
| | | x | x | | | | CS-310 | Programming Techniques |
| | | x | x | x | | | CS-320 | Organization of Programming Languages |
| | | x | x | x | | | CS-340 | Introduction to File Processing |
| x | x | x | | | | x | CS-350 | Computer Circuit Design |
| x | x | x | | | | | CS-360 | Computer Architecture |
| | | x | | | | | CS-410 | System Design & Analysis |
| | | x | | x | | | CS-420 | Operating System Concepts |
| | | | | | | | CS-430 | Simulation & Modeling |
| | | | | | | | CS-440 | Microcomputers |
| | | | | x | | | CS-450 | Data Base Management Systems Design |
| | | | | x | | | CS-460 | Assemblers and System Programming |
| | | | | x | | | CS-470 | Information Systems Analysis and Design |
| x | x | x | | | x | | ETR-110 | Networks I |
| x | x | x | | | x | | ETR-120 | Electronics I |
| x | x | | | | x | | ETR-130 | Electronics Lab I (1 cr.) |
| x | x | | | | x | | ETR-220 | Electronics II |
| x | x | | | | x | | ETR-230 | Electronics Lab II (1 cr.) |
| x | x | | | | | x | ETR-250 | Networks II |
| x | x | | | | x | | ETR-255 | Electricity Laboratory (1 cr.) |
| x | | | | | | | ETR-320 | Electronics III |
| x | | | | | | | ETR-430 | Networks III |
| x | | | | | | | EE-410 | Electromagnetic Theory |
| x | | | | | | | EE-420 | Field Transmission Lines |
| x | | | | | | | EE-430 | Fund. of Communication Systems |
| x | x | | | | | | EE-440 | Energy Systems |
| x | | | | | | | EE-450 | Control Systems |
| x | | | | | | | EE-460 | Micro-electronics |
| x | | | | | | | EE-470 | Elect. Eng. Analysis/Design |
| | x | | | | x | | MT-220 | Principles of Technology |
| x | x | | | | | x | MT-320 | Engineering Drawing (2 cr.) |
| | x | | | | | | MT-330 | Industrial Planning |
| | x | | | | | | MT-350 | Fund. of Control System Technology |
| x | x | | | | | | MT-380 | Strength of Materials (4 cr.) |
| | x | | | | x | | ET-210 | Instrumentation I |
| | x | | | | | x | ET-310 | Instrumentation II |
| | x | | | | | x | ET-410 | Electronic Technology |
| | x | | | | | x | ET-420 | Fund. of Communication Technology |
| x | x | x | x | x | | | | Electives (in credits) |
| | | | | x | | | | 30 credits in Business |

| PROGRAM REQUIREMENTS | | DEGREE CODE |
|---|---|---|
| B.S. Electrical Engineering (EE) | 138 credits | 460 |
| B.S. Computer Science (CS) | 120 credits | 463 |
| B.S. Computer Science with a Business Systems Option | 120 credits | 463 |
| B.S. Electronic Technology (ET) | 120 credits | 461 |
| Basic Electronic Cert. (BEC) | 30 credits | 360 |
| Advanced Electronic Cert. (AEC) | 30 credits | 361 |
| Computer Science Cert. Individualized | 30 credits | 363 |

100 level are beginning courses
200 and 300 level are intermediate courses
400 level are advanced courses

NOVA UNIVERSITY
3301 College Avenue
Fort Lauderdale, FL 33314

ELECTRICAL ENGINEERING
ELECTRONIC TECHNOLOGY
COMPUTER SCIENCE
MATHEMATICS

## Course Descriptions

**MAT-150 College Mathematics (Precalculus)**
Review of algebra, trigonometric functions, graphs of functions, logarithms, exponents, functions of the natural number, introduction of calculus, concept of limits, integrals.

**MAT-220 Calculus II**
Riemann sums, the definite integral, methods of integration, continuation of exponential logarithmic functions, inverse trigonometric functions, L'Hopital's rule, and improper integrals. **Prerequisite: Calculus I or Equivalent**

**MAT-310 Differential Equations**
Solving first order ordinary differential equations, exact, separable and linear. Applications to rates and mechanics, theory of higher order linear differential equations. Methods of undetermined coefficients and variation of parameters, application to vibrating mass and electric circuits; power series solutions. Partial differential equations: the methods of separation of variables, linear partial differential equations and their application to electronics and electrical engineering problems; solutions of initial boundary problems; Fourier series and Fourier transforms; inhomogeneous problems; introduction of numerical methods. Laplace transforms. **Prerequisite: Calculus III or Equivalent**

**PHY-140 Physics I**
Basic principles of mechanics including Vectors, force, equilibrium, displacement, velocity, acceleration, mass, Newton's Laws, work energy, gravitation, momentum, rotational motion, mechanics of systems of particles and rigid bodies.
**Prerequisite Calculus I**

### WHAT ARE REGISTRATION POLICIES?

How to Drop and Add Courses.

The first week of classes is the Drop/Add Period. After a class has met once you must receive written permission from the instructor or your counselor to add the class. The normal refund policy applies to a course dropped during the drop and add period unless another course of equal credit, with the same term beginning date, is added in its place.

The Registrar's Office must be notified in writing of the course to be dropped. This may be done by completing a change of Registration form available in the Registrar's Office or by mailing a simple written note to the Registrar's Office.

Tuition Refund Policy

The following refund policy will be computed based upon the date written notification of the drop is received by the Registrar's Office:

100% refund prior to the first class meeting.

75% refund prior to the second class meeting, regardless of class attendance.

50% refund prior to the third class meeting, regardless of class attendance.

Fees are non-refundable.

After the third class meeting, a student may withdraw from a course by completing a "Withdrawal Form" available in the Registrar's Office. After one half of the course is completed, instructor's or counselor's approval is required to withdraw from a course.

How to Withdraw

If you wish to withdraw from a course after the refund period is over you must submit a completed withdrawal form to the registration office within the first half of the course. Between that time and the last class meeting before the final exam, you may withdraw and obtain a "W" only with the consent of the instructor or academic counselor on the withdrawal form. You are expected to attend all classes and may be administratively withdrawn if you fail to meet attendance requirements of the instructor.

How to Take an Incomplete

With the written approval of the course instructor, you may have up to one additional term to complete the course and receive a letter grade. An incomplete form must be completed and signed by the instructor in order to receive a grade of "I". The grade of "I" remains permanently on the record if the work is not completed within the extension period.

### NOVA COLLEGE OFFERS A NUMBER OF ADDITIONAL DEGREE PROGRAMS IN BOTH DAY AND EVENING FORMAT.

**For Information Call: 475-7340**

### FINANCIAL AID

Nova University participates in various governmental financial aid programs for the benefit of its students.

For information call: 475-7410